Suicidalnost u shizofrenih bolesnika

/ Suicidality in Schizophrenic Patients

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Svrha rada je istražiti učestalost pojavnosti suicidalnosti u shizofrenih bolesnika hospitaliziranih na Klinici za psihijatriju KBC-a Osijek od 2010. do 2015. godine te utvrditi postoji li značajna povezanost između suicidalnosti i parametara prikupljenih u istraživanju. Ispitanike je činilo 380 shizofrenih bolesnika, hospitaliziranih na Klinici za psihijatriju KBC-a Osijek u razdoblju 2010. do 2015. godine. Podatci su prikupljeni iz povijesti bolesti ispitanika s dijagnozom shizofrenije za što je korišten upitnik sastavljen u svrhu ovog istraživanja sa sljedećim podatcima: dob, spol, radni status, bračni status, stručna sprema, broj djece, lijekovi korišteni za liječenje shizofrenije, postojanje pokušaja ili ponovljenog pokušaja suicida, način pokušaja suicida, komorbiditetne dijagnoze, dob početka liječenja, broj hospitalizacija te trajanje psihijatrijskog liječenja u godinama. Od ukupnog broja ispitanika, 12,6 % pokušalo je suicid, a 3,95 % ponovilo je pokušaj suicida. U promatranom razdoblju najviše pokušaja suicida bilo je 2011., a najmanje 2014. godine. Na temelju dobivenih rezultata utvrđena je veća pojavnost suicidalnosti u ispitanika koji nisu bili u braku, koji su u terapiji shizofrenije koristili više od 3 lijeka te nitrazepam, a rizičnim čimbenikom smatraju se i veći broj hospitalizacija te postojanje graničnog poremećaja ličnosti u ispitanika.

/ The aim of this study was to investigate the frequency of incidence of suicidality in patients diagnosed with schizophrenia, hospitalized at the Psychiatric Clinic of the Clinical Hospital Centre Osijek in the period from 2010 to 2015, as well as to determine whether there was a significant relationship between suicidality and parameters collected in the study. This study comprised 380 schizophrenic patients hospitalized at the Psychiatric Clinic of the Clinical Hospital Centre Osijek in the period between 2010 and 2015. Data were collected from the medical histories of participants diagnosed with schizophrenia by means of a questionnaire drafted for the purpose of this study. The questionnaire contained the following information: age, sex, employment status, marital status, qualifications, number of children, medications used to treat schizophrenia, existence of a suicide attempt or a repeated suicide attempt, method of a suicide attempt, comorbid diagnoses, age when the treatment started, number of hospitalizations and duration of psychiatric treatment in years. Out of total number of participants, 12.6% of them attempted to commit suicide and 3.95% of participants repeated a suicide attempt. In the observed period, the highest number of suicide attempts took place in 2011 and the lowest number in 2014. Based on the obtained results, it was determined that participants more likely to attempt suicide were unmarried participants and participants using more than three medications during their schizophrenia treatment, including nitrazepam. Other risk factors included a greater number of hospitalizations, as well as borderline personality disorder in participants.

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UVOD

Suicidalnost kao kompleksan entitet predmet je mnogih istraživanja u različitim područjima znanosti, a posebna se pažnja pridaje suicidalnom ponašanju u sklopu psihijatrijskih bolesti s obzirom da osobe u kojih postoji mentalni poremećaj počine oko 90 % ukupnog broja suicida, a suicid se smatra i glavnim uzrokom preuranjene smrti u psihijatrijskoj populaciji (1). Rizik je u stanjima poput poremećaja prehrane i velikog depresivnog poremećaja čak dvadesetak puta veći nego u općoj populaciji, a povećan rizik nalazimo i u shizofrenih bolesnika, anksioznom poremećaju, ovisnostima te demenciji (2-7). Prema dostupnim podatcima 20–40 % oboljelih od shizofrenije pokuša počiniti suicid, a otprilike 5 % oboljelih u tome i uspije pa je tako mortalitet shizofrenih bolesnika osam puta veći od mortaliteta opće populacije (8-10).

Kompleksnost fenomena suicidalnosti leži u multifaktorskoj etiologiji, a zbog nepostojanja jasne definicije i klasifikacije suicida danas se uglavnom nastoje izbjeći koncepti dihotomnosti suicidalnosti (1,11). Jedna od jednostavnijih definicija navodi kako je samoubojstvo ponašanje kojim se čovjek usmrtio, a pri tome ga je vodila težnja da se usmrti, dok je pokušaj suicida postojanje takve težnje, ali je ponašanje zaustavljeno (3). Danas je jasno da je suicidalno ponašanje toliko kompleksno da se kreće u spektru od manje do više ozbiljnih formi. Sažimanjem brojnih podataka napravljena je ''klasifikacija'' suicidalnosti: izvršeni suicid, pokušaj suicida, pripremne radnje u kojima se poduzimaju akcije za samoozljeđivanje, ali su suicidalne radnje prekinute samoinicijativno ili zaustavljene od strane drugih, suicidalne ideje (aktivne i pasivne), nesuicidalno samoozljeđivanje (npr. paljenje kože, rezanje, ubadanje) kojem je glavna motivacija samokažnjavanje, ali i zadobivanje pažnje te namjerno samoozljeđivanje (12).

Shizofrenija kao kronična duševna bolest u kojoj dolazi do specifičnog oštećenja mišlje-

INTRODUCTION

As a complex entity, suicidality is the subject of many studies in various areas of science. Special attention is given to suicidal behaviour within psychiatric disorders, given the fact that people with mental disorders commit about 90% of the total number of suicides and that suicide is considered to be the major cause of premature death in the psychiatric population (1). In conditions such as eating disorder and major depressive disorder, the risk of suicide is almost twenty times higher than in the general population. Increased risk is often related to schizophrenia, cases of anxiety disorders, addictions and dementia (2-7). Based on the available data, 20 to 40% of schizophrenic patients try to commit suicide and about 5% of them succeed, thus making the mortality rate of schizophrenic patients eight times higher than the mortality rate in the general population (8-10).

The complexity of phenomenon of suicidality is based on multifactorial aetiology. Due to a lack of a clear definition and suicide classification, the concept of dichotomy in suicidality is largely avoided today (1,11). One of simpler definitions states that suicide is a person's behaviour resulting in death, driven by his/her willingness to die, while in case of a suicide attempt, such willingness exists but the behaviour is stopped (3). Today, it is evident that suicidal behaviour is so complex that it ranges from less serious to more serious forms. By summarizing numerous data, the following suicide "classification" has been made: committed suicide, suicide attempt, preparatory actions taken for self-harm where suicidal actions were interrupted by oneself or by others, suicidal ideas (active and passive), non-suicidal self-harm (e.g., burning, cutting, stabbing) for which the main motive is self-punishment and gaining attention, and intentional self-harm (12).

Schizophrenia is a chronic mental disorder which results in specific impairment of thought, perception, emotions, behaviour, motivation, at-

nja, percepcije, emocija, ponašanja, motivacije i pažnje, a vrlo često i do propadanja ličnosti veliki je javnozdravstveni problem jer uvelike narušava kvalitetu života bolesnika, ali i njegove okoline. Pogađa 1,1 % svjetske populacije starije od 18 godina, a najčešće započinje u razdoblju kasne adolescencije i srednjih tridesetih godina s ranijom pojavom u muškaraca (prije 25. godine) nego u žena (između 25. i 35. godine) (13,14). Sama etiologija još uvijek nije u potpunosti razjašnjena, a navjerojatnije se radi o poligenski i multifaktorski uzrokovanom poremećaju (15,16). Rizični faktori za suicid u shizofrenih bolesnika ne razlikuju se značajno od onih u općoj populaciji, a najčešće se radi o mlađoj životnoj dobi, muškom spolu, nezaposlenosti ili nesposobnosti za rad, ali i višem stupnju obrazovanja. Nadalje spominje se i povećani rizik u shizofrenih bolesnika koji su proživjeli određene traume u djetinjstvu poput fizičkog, emocionalnog i seksualnog zlostavljanja (17). Među čimbenicima povezanima sa samom bolesti i liječenjem, rizičnima se smatraju: starija dob prigodom početka bolesti, postojanje afektivnih poremećaja kao komorbiditeta, depresivni te psihotični simptomi (12-20). Sumanute ideje najčešće nisu bile povezane sa suicidalnim rizikom, a halucinacije su povezane s niskim rizikom od suicida (21). I dalje ostaje nejasna veza između trajanja same bolesti i negativnih simptoma te suicidalnog ponašanja s obzirom da su istraživanjima dobiveni nekonzistentni podatci (12,17). Nasilne metode pokušaja suicida, poput skoka ili lijeganja pred objekt u pokretu te skoka s visokog mjesta, smatraju se češće korištenim u osoba sa shizofrenijom nego u općoj populaciji (22).

CILJEVI ISTRAŽIVANJA

Ovaj rad ima za cilj istražiti učestalost pojavnosti suicidalnih obrazaca ponašanja (pokušaja suicida i ponovljenih pokušaja suicida) u shizofre-

tention and very often in decay of personality. Schizophrenia represents a major public health problem because it greatly disturbs the quality of a patient's life and his/her environment. It affects 1.1% of the world's population over the age of 18 and in most cases it begins in the period of late adolescence and mid-thirties, with earlier occurrence in men (before 25 years of age) than in women (between 25 and 35 years of age) (13,14). The aetiology itself has still not been fully clarified, but schizophrenia is most likely a polygenic and multifactorial disorder (15,16). Risk factors for suicide in schizophrenic patients are not significantly different than risk factors in the general population. The following are the most common risk factors: young age, male sex, unemployment or inability to work and a higher degree of education. Furthermore, there is also increased risk in schizophrenic patients who experienced certain traumas in childhood, such as physical, emotional and sexual abuse (17). Among factors related to the disorder itself and its treatment, the following are considered to be risk-inducing: older age during the first occurrence of a disorder, existence of affective disorders as comorbidity and depressive and psychotic symptoms (12-20). Most often, delusional ideas were not associated with a suicide risk and hallucinations were associated with a low suicide risk (21). Still, relationship between duration of the disorder, negative symptoms and suicidal behaviour remains unclear, given that data obtained in research cases were inconsistent (12,17). Violent methods of suicide attempts, such as jumping or lying in front of a moving object or jumping from a high place, are more commonly used by people suffering from schizophrenia than by the general population (22).

RESEARCH OBJECTIVES

This research paper aimed to investigate the frequency of incidence of suicidal behaviour (suicide attempts and repeated suicide at-

nih bolesnika Klinike za psihijatriju KBC-a Osijek, koji su hospitalizirani u razdoblju od početka 2010. do kraja 2015. godine te pokušati objasniti razloge suicidalnog ponašanja. Ciljevi su također utvrditi točan broj pokušaja suicida i ponovljenih pokušaja suicida u skupini hospitalno liječenih shizofrenih bolesnika u navedenom razdoblju (2010. - 2015. godine) , zatim utvrditi sociodemografske karakteristike te karakteristike bolesti (duljina trajanja liječenja, dob u kojoj su ispitanici oboljeli, broj hospitalizacija, broj i vrstu lijekova korištenih u liječenju shizofrenije, broj i vrstu komorbiditetnih dijagnoza) u ispitanika s pokušajem suicida te ponovljenim pokušajem suicida, kao i utvrditi razliku u učestalosti pokušaja suicida i ponovljenih pokušaja suicida s obzirom na prije navedene parametre.

METODE I ISPITANICI

Istraživanje je provedeno kao retrospektivno kohortno istraživanje. Ukupan broj ispitanika bio je 380, a podatci su prikupljeni u razdoblju od 15. 2. 2016. do 1. 5. 2016.godine. Dob ispitanika bila je 21-80 godina. Kriteriji za uključivanje u studiju bili su: postavljena dijagnoza shizofrenije u ispitanika, životna dob >18 godina, bolničko liječenje na Klinici za psihijatriju KBC-a Osijek u razdoblju od 1. 1. 2010. do 31. 12. 2015. godine.

Kao izvor podataka korištene su povijesti bolesti ispitanika s dijagnozom shizofrenije, pohranjene u arhivu Klinike za psihijatriju KBC-a Osijek. Za prikupljanje podataka koristili smo upitnik sastavljen u svrhu ovog istraživanja. Navedeni upitnik prikupljao je sljedeće podatke o pacijentu: spol, dob, bračni status, radni status, stručnu spremu, broj djece, trajanje liječenja (u godinama), sveukupan broj hospitalizacija, dob ispitanika prigodom početka liječenja, postojanje pokušaja suicida, postojanje ponovljenog pokušaja suicida, način na koji je suicid pokušan, broj i vrsta lijekova koje ispitanik koristi za liječenje shizofrenije te broj i vrsta

tempts) in patients diagnosed with schizophrenia hospitalized at the Psychiatric Clinic of the Clinical Hospital Centre Osijek in the period from early 2010 to late 2015, as well as to explain the reasons for suicidal behaviour. It also attempted to determine the exact number of suicide attempts and repeated suicide attempts within the group of hospitalized schizophrenic patients in the above-mentioned period (2010-2015), to determine social and demographic characteristics, characteristics of the disorder (duration of treatment, age when participants started suffering from schizophrenia, number of hospitalizations, number and type of medications used to treat schizophrenia, number and type of comorbid diagnoses) in participants with a suicide attempt and repeated suicide attempt, as well as to determine the difference in frequency of suicide attempts and repeated suicide attempts with regard to the above-mentioned parameters.

METHODS AND PARTICIPANTS

This study was conducted as a retrospective cohort study. The total number of participants included in the study was 380 and the data were collected in the period from February 15, 2016 to May 1, 2016. Participants were between 21 and 80 years of age. The following criteria had to be met for inclusion in the study: participants had to be diagnosed with schizophrenia, they had to be older than 18 and they had to be hospitalized at the Psychiatric Clinic of the Clinical Hospital Centre Osijek in the period between January 1, 2010 and December 31, 2015.

Medical histories of participants diagnosed with schizophrenia stored in the archives of the Psychiatric Clinic of the Clinical Hospital Centre Osijek were used as a source of data. Data were collected by means of a questionnaire drafted for the purpose of this research. The above-mentioned questionnaire included the following information on the patient: sex, age, marital sta-

komorbiditetnih dijagnoza u ispitanika. Svi podatci bilježeni su tako da ne otkrivaju identitet pojedinog bolesnika, a u radu su predstavljeni zbirno nakon statističke obrade.

Za analizu podataka korištene su metode univarijatne i bivarijatne statističke analize. Kategorijski podatci predstavljeni su apsolutnim i relativnim frekvencijama. Numerički podatci opisani su aritmetičkom sredinom i standardnom devijacijom u slučaju normalne distribucije, a u slučajevima odstupanja od normalne distribucije medijanom i interkvartilnim rasponom. Normalnost raspodjele numeričkih varijabli testirana je Kolmogorov-Smirnovljevim testom. Razlike među kategorijskim varijablama ispitane su pomoću $\chi 2$ testa te Fisherovim egzaktnim testom u slučajevima izrazito male očekivane frekvencije. Razlike normalno raspodijeljenih numeričkih varijabli između dviju nezavisnih skupina testirane su Studentovim t testom, a u slučaju odstupanja od normalnosti Mann-Whitneyevim U testom. Za statističku analizu korišten je statistički program *SPSS* (inačica 16.0, SPSS Inc., Chicago, IL, SAD). Razina statističke značajnosti postavljena je na $\alpha = 0,05$.

REZULTATI

Od ukupnog broja ispitanika, 56,8 % bilo je muškog, a 43,2 % ženskoga spola, dok je medijan dobi bio 50 godina s IQR od 40 do 57 godina. Uspoređujući spolove pronađena je statistički značajna razlika u dobi te bračnom statusu, pri čemu su ispitanice bile starije od ispitanika (Mann-Whitneyev U test, $p < 0,001$) i češće su bile u braku ili razvedene, dok je veći postotak ispitanika pripadao skupini samaca (χ^2 test, $p < 0,001$). Najveći broj ispitanika bio je nezaposlen ili umirovljen (94,2 %) te ih je najviše bilo srednje stručne spreme (70 %); 61,1 % ispitanika nije imao djece.

Medijan duljine trajanja liječenja shizofrenije iznosio je 14 godina s IQR od 8 do 20 godina.

tus, employment status, qualifications, number of children, duration of treatment (in years), total number of hospitalizations, age when the treatment started, existence of a suicide attempt, existence of a repeated suicide attempt, method of the suicide attempt, number and type of medications used to treat schizophrenia, as well as number and type of comorbid diagnoses in participants. All data were recorded in a way which does not reveal the identity of a particular patient. They are presented collectively in this paper, after conducting the statistical analysis.

Data were analysed using methods of univariate and bivariate statistical analysis. Categorical data were presented as absolute and relative frequencies. Numerical data were described as arithmetic mean and standard deviation in case of normal distribution and as median and interquartile range in cases of deviation from normal distribution. Normality of distribution of quantitative variables was tested by the Kolmogorov-Smirnov test. Differences between categorical variables were tested by the $\chi 2$ test and Fisher's exact test in cases of extremely low expected frequency. Differences in normally distributed quantitative variables between two independent groups were tested by Student's t-test and Mann-Whitney U test in case of deviation from normality. The SPSS software package (version 16.0, SPSS Inc., Chicago, IL, USA) was used for statistical analysis. The level of statistical significance was set at $\alpha = 0.05$.

RESULTS

Out of the total number of participants, 56.8% were men and 43.2% were women, with the median age of 50 years of age and IQR from 40 to 57 years of age. Regarding the sexes, statistically significant differences in age and marital status were found. Female participants were older than male participants (Mann-Whitney U test, $p < 0.001$) and were more often married or divorced, while a higher percentage of

Medijan broja hospitalizacija zbog shizofrenije bio je 6 s IQR od 3 do 10, a medijan lijekova koje su ispitanici koristili u liječenju shizofrenije bio je 4 s IQR od 3 do 5. Medijan dobi u kojoj je započeto liječenje shizofrenije bio je 33 godine s IQR od 26 do 41 godina, a uspoređujući spolove pronađena je statistički značajna razlika u dobi u kojoj je liječenje započeto te duljini trajanja liječenja (tablica 1).

Ukupan broj lijekova za liječenje shizofrenije korišten u ispitanika iznosio je 21. U skupinu najprimjenjivanijih ubrajamo antipsihotike starije generacije, antiparkinsonike te anksiolitike. Pojedinačno, najčešće korišteni bili su: diazepam (72,4 %) i biperiden (64,2 %); 33,5 % bolesnika imalo je jednu, dvije ili tri komorbiditetne dijagnoze, a najčešće su bile iz skupine psihičkih poremećaja i poremećaja ponašanja (37,79 %). Usporedbom spolova pronađena je statistički značajna razlika u zastupljenosti pojedinih komorbiditetnih dijagnoza pri čemu su esencijalna hipertenzija, hipotireoza te akutna reakcija na stres bile češće u ispitanica dok su kronični gastritis i alkoholizam bili češći u ispitanika.

S obzirom na ukupan broj hospitaliziranih shizofrenih pacijenata u pojedinoj godini, najviše pokušaja suicida bilo je 2011. godine. Te godine 18,87 % ukupnog broja hospitaliziranih shizofrenih bolesnika pokušalo je počiniti suicid, dok je najmanje pokušaja s obzirom na broj hospitaliziranih shizofrenih bolesnika bilo 2014. godine (6,9 %).

Od ukupnog broja ispitanika 48 (12,6 %) pokušalo je suicid te je zabilježeno 7 različitih načina pokušaja suicida (tablica 2). Statističkim testo-

male participants was single (χ^2 test, $p < 0.001$). The highest number of participants was unemployed or retired (94.2%) and most of them acquired secondary school qualifications (70%). 61.1% of participants had no children.

The median duration of treatment of schizophrenia was 14 years with IQR from 8 to 20 years. The median number of hospitalizations due to schizophrenia was 6 with IQR from 3 to 10, and the median for medications used to treat schizophrenia was 4 with IQR from 3 to 5. Median related age when the treatment started was 33 years of age with IQR from 26 to 41 years of age. When comparing sexes, a statistically significant difference was found between the age when the treatment started and duration of treatment (Table 1).

The total number of medications used to treat schizophrenia in participants was 21. The most commonly used group included the following medications: first-generation antipsychotics, antiparkinson medications and anxiolytics. Specifically, the most commonly used medications were diazepam (72.4%) and biperiden (64.2%). 33.5% of patients had one, two or three comorbid diagnoses that belonged to a group of mental disorders and behavioural disorders (37.79%). A statistically significant difference in the prevalence of particular comorbid diagnoses was found between the sexes, with essential hypertension, hypothyroidism and acute stress reaction more common in female participants, while chronic gastritis and alcoholism were more common in male participants.

With regard to the total number of hospitalized schizophrenic patients in a specific year,

TABLE 1. Age when the treatment started and duration of treatment of schizophrenia with regard to the sexes

Parameter	Male n = 216	Female n = 164	p*
Duration of treatment (in years) †	13 (7-20)	15 (10-22)	**0.021**
Age when the treatment started†	31 (24-39)	36 (28-44)	**< 0.001**

† Median (interquartile range)

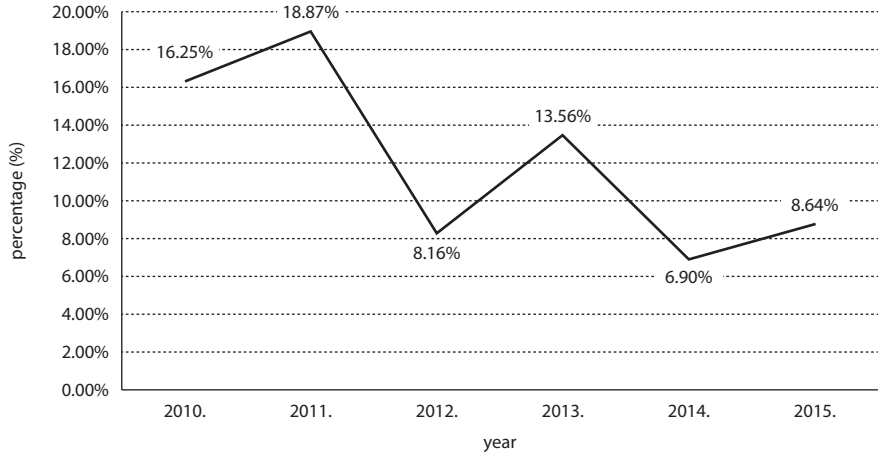

FIGURE 1. Percentage indicating the number of hospitalized schizophrenic patients who attempted to commit suicide in the period from 2010 to 2015

vima nije pronađena značajna razlika u načinu pokušaja suicida među spolovima (χ^2 test; p = 0.230).

Prosječna dob ispitanika koji su pokušali suicid iznosila je 49 godina sa standardnom devijacijom od 11 godina. Najviše ispitanika s pokušajem suicida bilo je neudano/neoženjeno (43,75 %), umirovljeno ili nezaposleno (93,75 %) te srednje stručne spreme (68,76 %), a najčešće nisu imali djece. Uspoređujući skupine s pokušajem suicida i bez pokušaja pronađena je statistički značajna razlika u bračnom statusu ispitanika, pri čemu je razvedenih više bilo u skupini ispitanika s pokušajem suicida

TABLE 2. Methods of suicide attempts in participants

Method of suicide attempt	Number of participants (%)
X61 (Intentional self-poisoning by psychotropic drugs)	29 (60.41)
X78 (Intentional self-harm by sharp object)	9 (18.75)
X70 (Intentional self-harm by hanging, strangulation and suffocation)	2 (4.17)
X80 (Intentional self-harm by jumping from a high place)	4 (8.33)
X83.0 (Intentional self-harm by other specified means – electricity)	1 (2.08)
X65 (Intentional self-poisoning and exposure to alcohol)	1 (2.08)
X81 (Intentional self-harm by jumping or lying in front of a moving object)	1 (2.08)

the highest number of suicide attempts took place in 2011. During that year, 18.87% of the total number of hospitalized schizophrenic patients attempted to commit suicide, while the lowest number of attempts with regard to the number of hospitalized schizophrenic patients took place in 2014 (6.9%).

Out of the total number of participants, 48 (12.6%) of them attempted to commit suicide and 7 different suicide methods were recorded (Table 2). By means of statistical tests, a statistically significant difference was not found in methods of suicide attempts with regard to sexes (χ^2 test; p = 0.230).

The average age of participants who attempted to commit suicide was 49 with a standard deviation of 11 years. The majority of participants who attempted suicide were unmarried (43.75%), retired or unemployed (93.75%) and had secondary school qualifications (68.76%). In most cases they had no children. When comparing groups with and without suicide attempts, a statistically significant difference in marital status of participants was found, with more divorced participants belonging to the group of participants with a suicide attempt and more married participants belonging to the group of participants without a suicide attempt. (χ^2 test, p = 0.020)

dok je udanih i oženjenih bilo više u skupini bez pokušaja suicida (χ^2 test; p = 0.020)

Najveći broj ispitanika s pokušajem suicida trošio je 4–6 lijekova u terapiji shizofrenije, a uspoređujući skupine s pokušajem suicida i bez pokušaja pronađena je statistički značajna razlika u broju korištenih lijekova za liječenje, pri čemu su ispitanici s pokušajem suicida u terapiji shizofrenije češće koristili >3 lijeka (χ^2 test; p = 0.013). Najčešće rabljeni lijekovi bili su: biperiden (72,92 %) i diazepam (66,67 %) te je pronađena statistički značajna razlika između ispitanika s pokušajem i onih bez pokušaja suicida u korištenju nitrazepama u terapiji shizofrenije, pri čemu je skupina s pokušajem suicida češće koristila nitrazepam (χ^2 test; p = 0.047). Najveći broj ispitanika u skupini onih koji su pokušali suicid (66,67 %) nije imao komorbiditetne dijagnoze, a preostali su imali jednu, dvije ili tri komorbiditetne dijagnoze, najčešće: akutno otrovanje alkoholom, alkoholizam, težak povratni depresivni poremećaj bez simptoma psihoze, bipolarni afektivni poremećaj, posttraumatski stresni poremećaj te granični poremećaj ličnosti. Granični poremećaj ličnosti (F 60.3) češće je bio prisutan u skupini shizofrenih bolesnika s pokušajem suicida (Mann-Whitneyev test; p = 0.016).

Ovi ispitanici najčešće su u vrijeme započinjanja liječenja shizofrenije imali između 21 i 35 godina, a ni jedan ispitanik liječenje nije započeo u dobi nakon 65. godine života. Devedeset posto ispitanika liječi shizofreniju duže od 10 godina što ih svrstava u skupinu kroničnih shizofrenih pacijenata. Uspoređujući skupine ispitanika s pokušajem i i bez pokušaja suicida pronađena je statistički značajna razlika u broju hospitalizacija dok u duljini trajanja liječenja te dobi u kojoj je započeto liječenje nije nađena statistički značajna razlika (tablica 3).

U istraživanju je posebno analizirano i 15 ispitanika koji su ponovili pokušaj suicida. 51,52 %

The majority of participants who attempted to commit suicide used 4 to 6 medications for treatment of schizophrenia. When comparing groups with and without a suicide attempt, a statistically significant difference was found in the number of medications used. Patients with a suicide attempt more often used more than 3 medications for treatment of schizophrenia (χ^2 test; p = 0.013). The most commonly used medications were biperiden (72.92%) and diazepam (66.67%). A statistically significant difference was found between participants with a suicide attempt and those without a suicide attempt regarding the use of nitrazepam in treating schizophrenia, where the group with a suicide attempt used nitrazepam (χ^2 test; p = 0.047) more often. The majority of participants in the group of patients with attempted suicide (66.67%) had no comorbid diagnoses, while the rest had one, two or three comorbid diagnoses, most commonly: acute alcohol poisoning, alcoholism, recurrent severe depressive disorder without psychotic features, bipolar affective disorder, posttraumatic stress disorder and borderline personality disorder. Borderline personality disorder (F 60.3) was more common in the group of schizophrenic patients with a suicide attempt (Mann-Whitney U test; p = 0.016).

At the time of beginning of schizophrenia treatment, participants were most often between 21 and 35 years of age. None of participants started treatment after 65 years of age. 90% of participants were treated for schizophrenia for more than 10 years, making them chronic schizophrenic patients. By comparing groups of participants with and without a suicide attempt, a statistically significant difference was found in the number of hospitalizations. There were no statistically significant differences in duration of treatment and the age when the treatment started (Table 3).

The study also analysed 15 participants who repeated a suicide attempt. 51.52% of them were men and the majority were not married (87.88%) and had no children. The average age

ih je bilo muškog spola, a najveći postotak nije bio u braku (87,88 %) te nije imao djece. Srednja dob ispitanika bila je 48 godina sa standardnom devijacijom 12. 53,33 % ispitanika imalo je dva pokušaja suicida, 20 % tri pokušaja, 13,33 % pet pokušaja i po jedan ispitanik 4 i 11 pokušaja suicida.

Najčešće korišten način suicida kod ponovljenog pokušaja suicida ponovno je bilo namjerno samootrovanje psihotropnim lijekovima (73,33 %), 13,33 % ispitanika koristilo je namjerno ozljeđivanje oštrim predmetom, dok je po jedan ispitanik koristio namjerno samoozljeđivanje skokom s visokog mjesta te namjerno samootrovanje alkoholom. Ostali načini suicida nisu korišteni. Usporedbom skupina ispitanika s jednim i više pokušaja suicida nisu pronađene statistički značajne razlike u načinu pokušaja suicida *(χ^2 test;* p = 0.600).

Medijan broja lijekova za liječenje shizofrenije korištenih u ispitanika s ponovljenim pokušajem suicida bio je 4 uz IQR od 4 do 5, a najčešće su koristili diazepam (80 %) te biperiden (66,67 %). 66,67 % ispitanika nije imalo komorbiditetnih dijagnoza, a ostali su imali jednu, dvije ili tri komorbiditetne dijagnoze, najčešće: bipolarni afektivni poremećaj, granični poremećaj ličnosti, posttraumatski stresni poremećaj i teški depresivni povratni poremećaj bez simptoma psihoze. Usporedbom dvaju skupina nisu pronađene statistički značajne razlike u navedenim parametrima.

U vrijeme početka liječenja 80 % ispitanika s ponovljenim pokušajem suicida imalo je između 21 i 50 godina, dok su ostali bili mlađi od

of participants was 48, with a standard deviation of 12. 53.33% of participants attempted to commit suicide 2 times, 20% of them three times, 13.33% of them five times and there were two patients with 4 and 11 suicide attempts.

The most commonly used method of suicide in a repeated suicide attempt was intentional self-poisoning by psychotropic drugs (73.33%). 13.33% of participants used intentional self-harm by sharp object, while one participant used intentional self-harm by jumping from a high place and another one used intentional self-poisoning by alcohol. Other methods of suicide were not used. By comparing a group of participants with one suicide attempt and a group of participants with multiple suicide attempts, statistically significant differences in the method of suicide attempts were not found (χ^2 test; p = 0.600).

The median medications for treatment of schizophrenia used by participants with a repeated suicide attempt was 4, with IQR from 4 to 5. Participants used diazepam (80%) and biperiden (66.67%) most often. 66.67% of participants had no comorbid diagnoses, while the rest had one, two or three comorbid diagnoses, most commonly: bipolar affective disorder, borderline personality disorder, posttraumatic stress disorder and recurrent severe depressive disorder without psychotic features. By comparing the two groups, statistically significant differences with regard to the above-mentioned parameters were not found.

At the time when the treatment started, 80% of participants with a repeated suicide attempt were between 21 and 50 years of age, while oth-

TABLE 3. Comparison of participants with and without a suicide attempt with regard to the age when the treatment started, duration of treatment and number of hospitalizations

Parameter	Patients who attempted suicide n = 48	Patients who did not attempt suicide n = 332	p *
Duration of treatment (in years) †	15 (11-22)	13 (8-20)	0.085
Number of hospitalization due to schizophrenia †	9 (5-13)	5 (3-10)	**< 0.001**
Age when the treatment started †	33 (27-35)	33 (2-41)	0.737

* Mann-Whitney U test; † median (interquartile range)

21 godinu. U prosjeku je liječenje shizofrenije trajalo 16 godina, a medijan broja hospitalizacija iznosio je 10 s IQR od 7 do 14. Usporedbom dviju skupina nisu pronađene statistički značajne razlike u navedenim parametrima (tablica 4).

RASPRAVA

Skupine muških i ženskih shizofrenih ispitanika u našem istraživanju značajno se razlikuju u bračnom statusu, broju djece i dobi. Od prije je poznato kako u shizofreniji postoji razlika među spolovima, a jedna od njih je i kasniji nastup bolesti u žena nego u muškaraca, što se upravo i može smatrati jednim od razloga češće zastupljenosti braka i djece u žena oboljelih od shizofrenije. Naime, kasnija pojava bolesti omogućuje ostvarenje u ulozi majke i supruge, što nije slučaj u muškaraca (23,24). Općenito gledajući shizofrenija se kao bolest najčešće javlja u dobi između kasne adolescencije i srednjih tridesetih godina, a u našem istraživanju liječenje je u muškaraca u prosjeku započinjalo s 32 godine, a u žena s 36 godina (13,14). Značajne razlike među spolovima postoje i u zastupljenosti pojedinih komorbiditetnih dijagnoza. Alkoholizam je tako češći u muškaraca (Fisherov test; p <0,001) što se uklapa u saznanja o većoj sklonosti muškaraca konzumaciji alkohola, posebice većih količina pa shodno tome i alkoholizmu (25), a akutna reakcija na stres kao komorbiditet u našem se istraživanju pokazala češće zastupljenom u žena (Fisherov test; p = 0,034).

ers were younger than 21 years of age. Average schizophrenia treatment lasted for 16 years and the median number of hospitalizations was 10, with interquartile range between 7 and 14. By comparing the two groups, statistically significant differences with regard to the above-mentioned parameters were not found (Table 4).

DISCUSSION

Groups of male and female participants suffering from schizophrenia in this study differed significantly in terms of marital status, number of children and age. It has been previously established that there is a difference between the sexes with regard to schizophrenia. One of the differences is a later occurrence of this disorder in women than in men, which can be considered one of the reasons for greater frequency of women suffering from schizophrenia, but these women being married with children. Later occurrence of this disorder makes it possible for women to become mothers and wives, which is not the case with men (23,24). Generally speaking, schizophrenia is a disorder occurring most commonly between the late adolescence and mid-thirties. This study analysed men whose treatment in average started at the age of 32 and women whose treatment started at the age of 36 (13,14). Significant differences between sexes were also present regarding the prevalence of specific comorbid diagnoses. Alcoholism is much more common in men (Fisher's test; p < 0.001), confirming the assumptions that men are more likely to consume alcohol, es-

TABLE 4. Comparison of participants with one suicide attempt and those with multiple suicide attempts with regard to the age when the treatment started, duration of treatment and number of hospitalizations

Parameter	One suicide attempt (n = 33)	Repeated suicide attempt (n = 15)	p
Duration of treatment (in years)	17 (7)	16 (7)	0.729*
Number of hospitalizations due to schizophrenia	8 (5-13)	10 (7-14)	0.124**
Age when the treatment started	34 (11)	32 (9)	0.516*

* T-test; ** Mann-Whitney U test

Od ukupnog broja promatranih ispitanika 12,6 % pokušalo je suicid, dok je 3,95 % ponovilo pokušaj suicida. Slični rezultati dobiveni su istraživanjem provedenim na 87 ispitanika oboljelih od shizofrenije u kojem je 23 % pokušalo suicid (10). U stručnoj literaturi podatci o učestalosti pokušaja suicida među shizofrenim bolesnicima različiti su, a procjenjuje se da suicid tijekom života pokuša čak oko 50 % shizofrenih bolesnika (10,26). Najčešće korišteni način pokušaja suicida u naših ispitanika bilo je samootrovanje psihotropnim lijekovima, kako u ispitanika s jednim, tako i onih s više pokušaja suicida, bez značajne razlike među navedenim skupinama što je u suprotnosti s podatcima dostupnima u literaturi u kojoj se navodi kako oboljeli od shizofrenije, za razliku od primjerice opće populacije i onih s poremećajima raspoloženja, najčešće koriste metode suicida poput skoka ili lijeganja pred objekt u pokretu te skoka s visokog mjesta (22). Mogući razlog ovog odstupanja može biti činjenica da u naše istraživanje nisu uvršteni ispitanici koji su uspjeli u pokušaju suicida već samo oni koji su ga pokušali što ne daje cjelovitu sliku o shizofrenoj populaciji i načinima suicida. U promatranom razdoblju od 6 godina, 2011. godina istakla se kao godina s najviše pokušaja suicida s obzirom na ukupan broj hospitaliziranih shizofrenih bolesnika, a 2014. godina kao godina s najmanje pokušaja suicida. Bez obzira na navedene razlike ne može se zaključiti kako se radi o kontinuirano silaznom ili uzlaznom trendu s obzirom da se postotak hospitaliziranih pacijenata oboljelih od shizofrenije koji su pokušali suicid nepredvidivo mijenja iz godine u godinu u promatranom razdoblju te bi svakako bilo potrebno provesti istraživanje na većem uzroku te u dužem vremenskom razdoblju kako bi se utvrdilo postoji li značajan trend pada ili rasta.

U našem istraživanju muški spol zastupljeniji je u ukupnom broju ispitanika s pokušajem suicida te ispitanici većinom pripadaju

pecially in larger amounts, as well as to indulge in alcoholism (25). This study showed that acute stress reaction as comorbidity is more common in women (Fisher's test, p = 0.034).

Out of the total number of observed participants, 12.6% of them attempted to commit suicide, while 3.95% of them repeated a suicide attempt. Similar results were obtained by means of a study carried out on 87 participants suffering from schizophrenia, 23% of which attempted to commit suicide (10). Data reported in specialized literature on the frequency of suicide attempts among schizophrenic patients vary, with some estimates that up to 50% of schizophrenic patients attempt to commit suicide during their lifetime (10,26). The method of a suicide attempt most commonly used by our participants was self-poisoning by psychotropic drugs, both in participants with one as well as in participants with multiple suicide attempts, without any significant difference between the above-mentioned groups. This is different from what is stated in the literature. These data indicate that, unlike the general population and patients with mood disorders, patients suffering from schizophrenia most often used suicide methods such as jumping or lying in front of a moving object or jumping from a high place (22). A possible reason for this deviation may be the fact that this study did not include participants whose suicide attempt was successful but only those participants who attempted to commit suicide, which does not provide a complete picture of schizophrenic population and suicide methods. During the observed period of 6 years, 2011 was the year with the highest number of suicide attempts with regard to the total number of hospitalized schizophrenic patients, while 2014 was the year with the least number of suicide attempts. Regardless of the above-mentioned differences, it cannot be concluded that this is a continuous downward or upward trend since the percentage of hospitalized patients suffering from schizophrenia who attempted to commit suicide unpredictably changed every year over the observed period. It

skupini nezaposlenih ili umirovljenih i imaju srednji stupanj obrazovanja, ali statističkim testovima nisu pronađene značajne razlike u navedenim varijablama između skupine ispitanika s pokušajem i bez pokušaja suicida. Međutim, dokazana je statistički značajna razlika u bračnom statusu između navedenih skupina ($\chi 2$ *test*, p = 0,020) pri čemu je razvedenih značajnije više u skupini s pokušajem suicida dok je onih u braku više u skupini bez pokušaja suicida pa je moguće samački život shvatiti kao rizični faktor za suicidalnost. Ovaj podatak može se objasniti i ranim poremećajem u socijalnom funkcioniranju koji se javlja najčešće prije 25. godine, a dokazan je u suicidalnih shizofrenih bolesnika, što potencijalno onesposobljava suicidalnu skupinu za uspostavljanje i održavanje dugotrajnih veza (27,28).

Ispitanici s pokušajem suicida koriste značajno veći broj lijekova što bi se moglo smatrati rizičnim čimbenikom za suicidalnost ($\chi 2$ test, p = 0,013) kao i korištenje nitrazepama u liječenju shizofrenije ($\chi 2$ test, p = 0,047). Rezultati velike studije provedene u Švedskoj, koja je za cilj imala usporediti stope suicida u shizofrenih bolesnika u ovisnosti o primjeni različite terapije pokazala je kako srednje velike i velike doze antipsihotika i antidepresiva primijenjene u liječenju shizofrenije pogoduju smanjenju smrtnosti, dok primjena čak i malih doza benzodiazepina, u čiju skupinu pripada gore spomenuti nitrazepam, povećava rizik od suicida za čak 70 % (29). Veći broj lijekova u suicidalnih ispitanika ne mora nužno označavati povećan rizik za suicidalnost već može biti povezan s težom kliničkom slikom same bolesti u pacijenata sklonih suicidalnosti, zbog čega je i bilo potrebno liječenje većim brojem lijekova, a slično objašnjenje moguće je ponuditi i za veći broj hospitalizacija koji je u našem istraživanju također proizašao kao faktor rizika s obzirom da smo uspoređujući ove dvije skupine pronašli statistički značajnu razliku u broju hospitalizacija, pri čemu je veći broj

would be necessary to conduct research which included a larger group of patients in a longer period in order to determine whether there is a significant trend of decline or growth.

In the present study, the male sex was more represented in the total number of participants with a suicide attempt. These participants mostly belonged to a group of unemployed or retired participants with secondary school qualifications, but there were no statistically significant differences with regard to the above-mentioned variables between the group of participants with and the group of participants without a suicide attempt. However, a statistically significant difference was found regarding marital status between the above-mentioned groups ($\chi 2$ test, p = 0.020). More divorced participants belonged to the group of participants with a suicide attempt, while more married participants belonged to the group of participants without a suicide attempt. Therefore, may be hypothesized that single living is a risk factor for suicidal behaviour. These data can also be explained by early disorder in social functioning that most often occurs before the age of 25 and is established in suicidal schizophrenic patients, which may make it difficult for a group of suicidal participants to establish and maintain long-term relationships (27,28).

Participants with a suicide attempt used a significantly higher number of medications, which could be considered as a risk factor for suicidal behaviour ($\chi 2$ test, p = 0.013), and were more likely to use nitrazepam in treatment of schizophrenia ($\chi 2$ test, p = 0.047). Results of a major study conducted in Sweden, which aimed to compare suicide rates in schizophrenic patients addicted to different therapies, showed that medium and large doses of antipsychotics and antidepressants used in treatment of schizophrenia help in reducing mortality rates. Usage of even small doses of benzodiazepine, which is in the group with the above-mentioned nitrazepam, increases the risk of suicide by almost 70% (29). A greater number of medications used by suicidal participants does not necessarily indicate an increased

bio prisutan u ispitanika s pokušajem suicida (Mann-Whitneyev U test; $p < 0.001$). Rizičnost većeg broja hospitalizacija za suicidalnost u shizofrenih kako mladih tako i starijih bolesnika spominje se i u brojnim drugim istraživanjima (26,30,31).

Između skupina shizofrenih bolesnika s pokušajem i bez pokušaja suicida uočena je i značajna razlika u prevalenciji graničnog poremećaja ličnosti (Fisherov test; $p = 0,016$) koji je bio češći u skupini ispitanika s pokušajem suicida. Rezultati većih studija provedenih diljem svijeta navode depresivni poremećaj te generalizirani anksiozni poremećaj kao značajne faktore rizika dok granični poremećaj ličnosti nije dovoljno istražen u smislu rizičnosti za suicidalnost shizofrenih bolesnika (32,33). Dugo se smatralo kako dijagnoze shizofrenije te bipolarnog afektivnog poremećaja uopće ne mogu koegzistirati zbog razlike u simptomatologiji, tj. češćeg pojavljivanja kvazipsihotičnih simptoma u graničnom poremećaju ličnosti u odnosu na češću pojavu psihotičnih simptoma u shizofrenih bolesnika, ali se novijim istraživanjima pokušava dokazati mogućnost koegzistiranja. Istraživanjem na 111 ispitanika objašnjena je mogućnost koegzistiranja, a poremećaji su se ponajviše preklapali u prisutnosti slušnih halucinacija, iako je donekle postojala razlika u učestalosti pojavljivanja (skupina shiozofrenih bolesnika imala je veću učestalost halucinacija). Daljnje interese svakako je bitno usmjeriti u smjeru proučavanja povezanosti ovih dviju dijagnoza, ali je neizbježno spomenuti još jednu od mogućih poveznica dvaju poremećaja, a to je samoozljeđujuće ponašanje (14,34). Karakterističnim za granični poremećaj ličnosti smatraju se upravo suicidalne geste i samoozljeđivanje, a smatra se i kako se 75 % bolesnika s graničnim poremećajem ličnosti samoozljeđuje, dok ih 10 % počini suicid. (35,36). Poremećaj ličnosti općenito se smatra četvrtim najvažnijim faktorom rizika za suicid nakon depresije, shizofrenije i alkoholizma što bi u slučaju koegzistiranja

risk of suicidal behaviour. It may be associated with a more severe medical history in patients prone to suicidal behaviour, which required treatment using a greater number of medications. A greater number of hospitalizations may also be explained in a similar way, as this study also defined it as a risk factor, given the fact that comparison of these two groups resulted in finding a statistically significant difference in number of hospitalizations, with a greater number of hospitalizations in cases of participants with a suicide attempt (Mann-Whitney U test, $p < 0.001$). Risk of multiple hospitalizations for suicidal behaviour of both young and old patients is mentioned in numerous studies (26,30,31).

A significant difference in prevalence of borderline personality disorder (Fisher's test, $p = 0.016$) was found between the groups of schizophrenic patients with and without a suicide attempt, with borderline personality disorder being more common in the group of participants with attempted suicide. Results of major studies conducted worldwide indicate that depressive disorder and generalized anxiety disorder are significant risk factors, while borderline personality disorder has not been sufficiently investigated in terms of risk for suicidal behaviour of schizophrenic patients (32,33). It was thought for a long time that diagnoses of schizophrenia and bipolar affective disorder cannot coexist due to differences in symptomatology, i.e. more frequent occurrence of quasi psychotic symptoms in case of borderline personality disorder compared with more frequent occurrence of psychotic symptoms in schizophrenic patients. Recent studies have been trying to prove the possibility of coexistence of the two. A study including 111 participants explained the possibility of coexistence, with disorders mostly overlapping in presence of auditory hallucinations; although there was a slight difference in incidence (a group of schizophrenic patients had a higher incidence of it). Further interests should most certainly be directed towards studying the correlation between these two diagnoses. But we must inevitably mention one of

dvaju poremećaja dodatno pridonosilo povećanju rizika za suicid te upućivalo na potrebu intenziviranja terapije u ovakvoj skupini bolesnika (37).

Istraživanje provedeno 2009. godine na shizofrenoj populaciji u Švedskoj, uvrstilo je kasniji početak bolesti (≥30 godina) u rizični faktor za pokušaj suicida, a druga pak istraživanja kao rizični faktor navode upravo suprotno uz postojanje i onih istraživanja koja nisu uspjela pronaći povezanost između tih dviju varijabli (38). Iako je u našem slučaju medijan dobi u kojoj je započeto liječenje shizofrenije u suicidalnih ispitanika 33 godine s interkvartilnim rasponom od 27 do 35 godina, značajna razlika u ovoj varijabli između skupine ispitanika s pokušajem i onih bez pokušaja suicida nije utvrđena (Mann-Whitneyev U test; p = 0.737), a značajnije razlike nema ni između skupina s jednostrukim i višestrukim pokušajem suicida (t test; p = 0,516). Meta-analizom 6 studija dobiveni su inkoherentni rezultati o povezanosti trajanja shizofrenije te suicidalnosti u bolesnika. Neke studije proglasile su kraće trajanje bolesti (< 5 godina) rizičnim faktorom, dok su rezultati drugih pokazali upravo suprotno (17). Statistički značajna razlika nije dokazana ni u našem istraživanju (Mann-Whitneyev test; p = 0.085).

ZAKLJUČCI

Na temelju provedenog istraživanja i dobivenih rezultata proizlaze zaključci da su shizofrene bolesnice sa suicidalnim pokušajima u dužem terapijskom tretmanu te sa češćim komorbiditetnim somatskim dijagnozama i dijagnozom akutne reakcije na stres, dok je u shizofrenih bolesnika muškog spola češći komorbiditet s kroničnim gastritisom i ovisnosti o alkoholu. U promatranom razdoblju najveći postotak pokušaja suicida shizofrenih bolesnika u odnosu na ukupan broj hospitaliziranih bolesnika bio je 2011., a najmanji

the possible connections between the two disorders – self-harmful behaviour (14,34). Suicidal gestures and self-harm are considered characteristic of borderline personality disorder. It is also considered that 75% of patients with borderline personality disorder indulge in self-harm, while 10% of patients commit suicide (35,36). Personality disorder is generally considered to be the fourth most important risk factor for suicide, after depression, schizophrenia and alcoholism, and would in case of the coexistence of the two disorders contribute to increased suicide risks and suggest the need for intensive therapy in such groups of patients (37).

A study conducted in 2009 on a schizophrenic population in Sweden included the later onset of disorder (≥ 30 years of age) as a risk factor for a suicide attempt, while other studies include the opposite as a risk factor, in addition to other studies which failed to find a connection between these two variables (38). Although in our case the median age when the treatment of schizophrenic suicidal patients started was 33, with an interquartile range between 27 and 35 years of age, a significant difference with regard to this variable was not found between the group of participants with a suicide attempt and the group of patients without a suicide attempt (Mann-Whitney U test; p = 0.737). There were no significant difference between groups with one and multiple suicide attempts (t-test; p = 0.516). In a meta-analysis of 6 studies, incoherent results on the association between duration of schizophrenia and suicidality in patients were obtained. Some studies have identified a shorter duration of illness (< 5 years) as a risk factor, while the results of other studies showed the opposite (17). A statistically significant difference was not established in our study (Mann-Whitney test, p = 0.085).

CONCLUSION

Based on the conducted study and obtained results, it was concluded that female schizophrenic patients with suicide attempts un-

2014. godine, ali nije zamijećen trend pada ni trend porasta s obzirom na to da se postotci mijenjaju iz godine u godinu. Najčešći način pokušaja suicida u ispitanika s pokušajem i ponovljenim pokušajem suicida bilo je namjerno samootrovanje psihotropnim lijekovima bez značajne razlike među skupinama. Ispitanici s pokušajem suicida češće su razvedeni i imaju značajnije veći broj hospitalizacija u odnosu na one bez pokušaja suicida. Također, ispitanici s pokušajem suicida koriste značajnije veći broj lijekova, češće koriste nitrazepam te češće imaju komorbiditetnu dijagnozu graničnog poremećaja ličnosti u odnosu na ispitanike bez pokušaja suicida. Provedeno istraživanje ima ograničenja s obzirom da u njega nisu uvršteni ispitanici koji su uspjeli u pokušaju suicida pa stoga ne pruža cjelovitu sliku o shizofrenoj populaciji i načinima suicida.

Kompleksnost ovog problema upućuje na potrebu daljnjih istraživanja područja suicidalnosti, kako one povezane sa shizofrenijom, tako i suicidalnosti uopće s obzirom da se radi o ''tihoj epidemiji'' te javnozdravstvenom problemu čije veličine društvo još uvijek nije svjesno, a također bi trebalo poboljšati načine registriranja te praćenja stope suicidalnosti (12).

dergo longer therapeutic treatment and are more often diagnosed with comorbid somatic illnesses and acute stress reaction. When it comes to male schizophrenic patients, comorbidity of chronic gastritis and alcohol addiction is more frequent. During the observed period, the highest percentage of suicide attempts among schizophrenic patients compared with the total number of hospitalized patients, was in 2011 and the lowest percentage in 2014. A downward or upward trend was not observed, since the percentages changed every year. The most common method of a suicide attempt in patients who attempted to commit suicide and those who repeated this attempt was intentional self-poisoning by psychotropic drugs, without significant differences between the groups. Patients who attempted to commit suicide were more likely to be divorced, with a significantly higher number of hospitalizations than those without suicide attempts. Furthermore, participants with a suicide attempt used a larger number of medications, most commonly nitrazepam, and they were more often diagnosed with comorbid borderline personality disorder, compared with the patients without a suicide attempt. The present study has some limitations as it did not include participants whose suicide attempt was successful and therefore it does not provide a complete picture of the schizophrenic population and suicide methods.

The complexity of this problem emphasizes the need for further research of the phenomenon of suicidality, its relation to schizophrenia and suicidality in general, given the fact that it can be seen as "a silent epidemic". It has become a major public health problem, at a scale of which society is still unaware. We should also improve the methods of registration and monitoring of suicide rates (12).

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